



HARRY TAKES THE TRAIN

Derek Radford

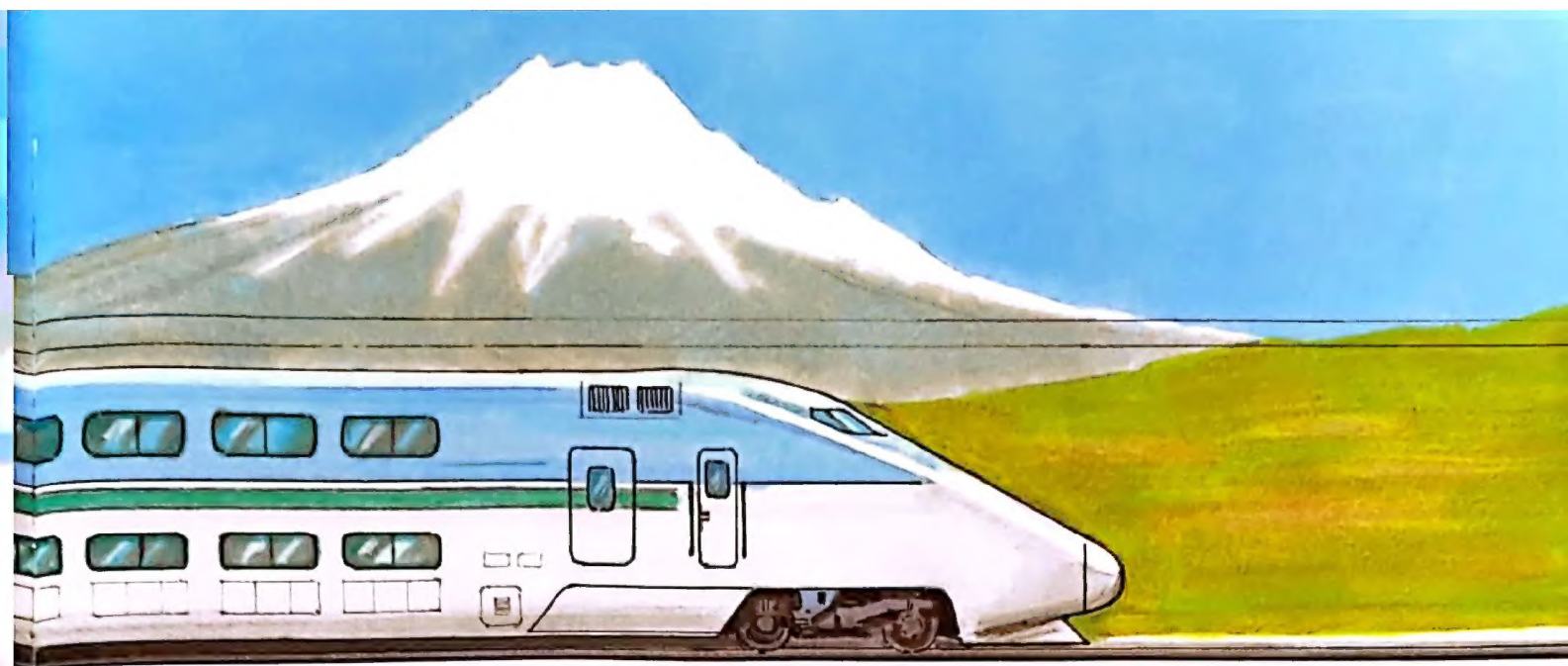
A **HARRY** BOOK



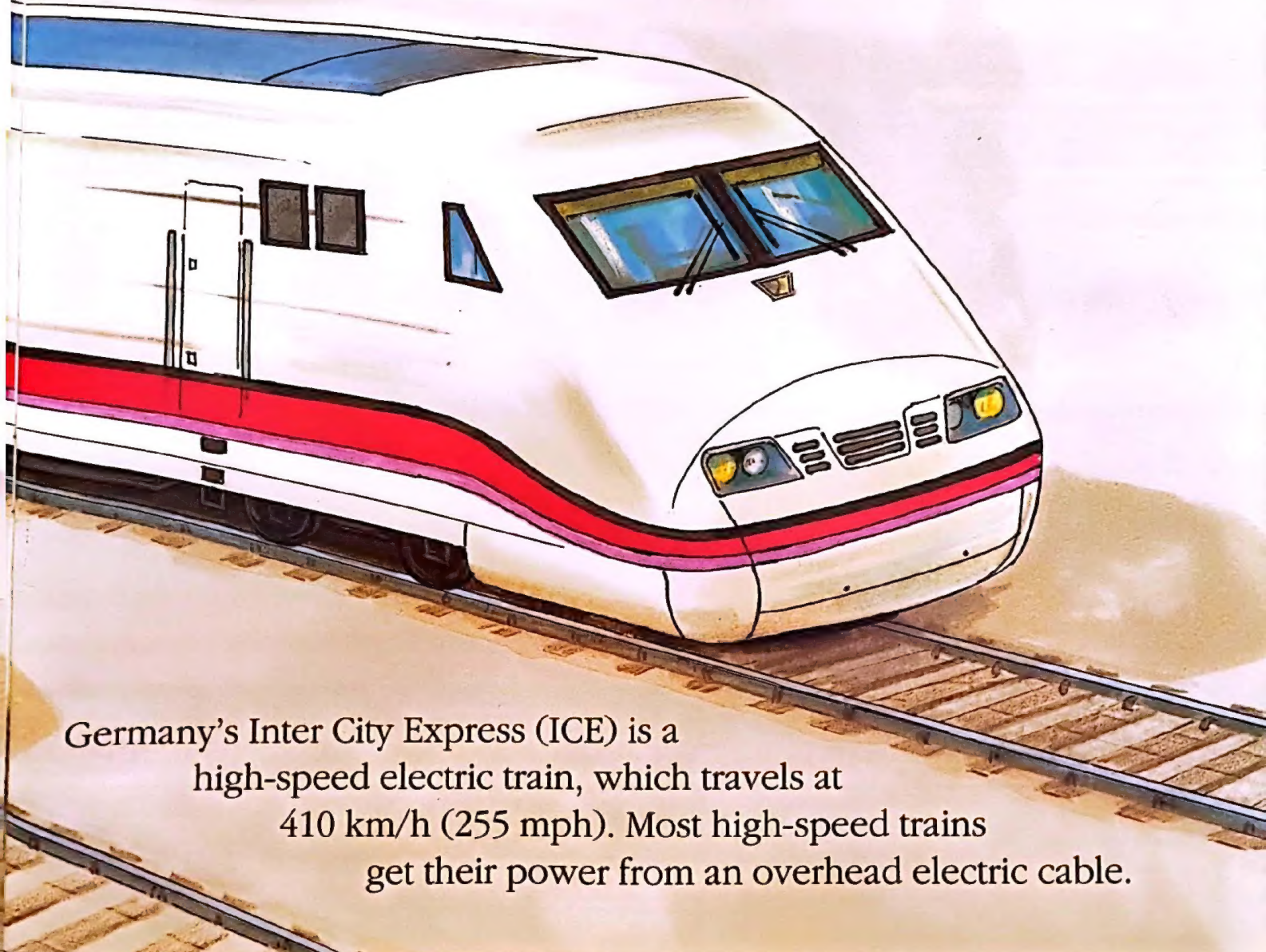




France's TGV is a high-speed electric train, which runs on its own specially built track. The TGV holds the world speed record of 515 km/h (320 mph).



Japan's double-decker Shinkansen is an electric high-speed commuter train, which seats 1,235 passengers and travels at 240 km/h (149 mph).



Germany's Inter City Express (ICE) is a high-speed electric train, which travels at 410 km/h (255 mph). Most high-speed trains get their power from an overhead electric cable.

For Max and Grace, my grandchildren

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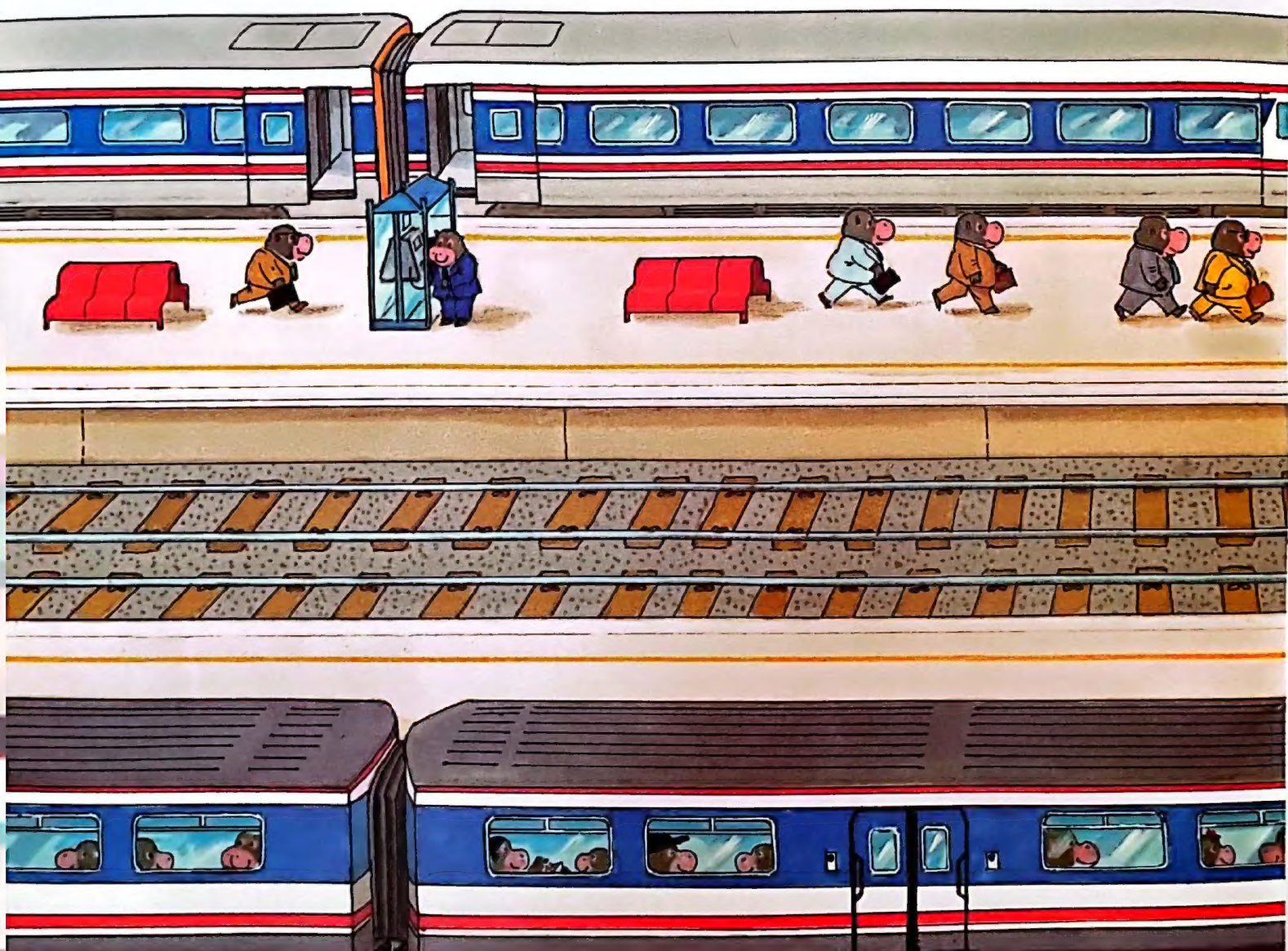
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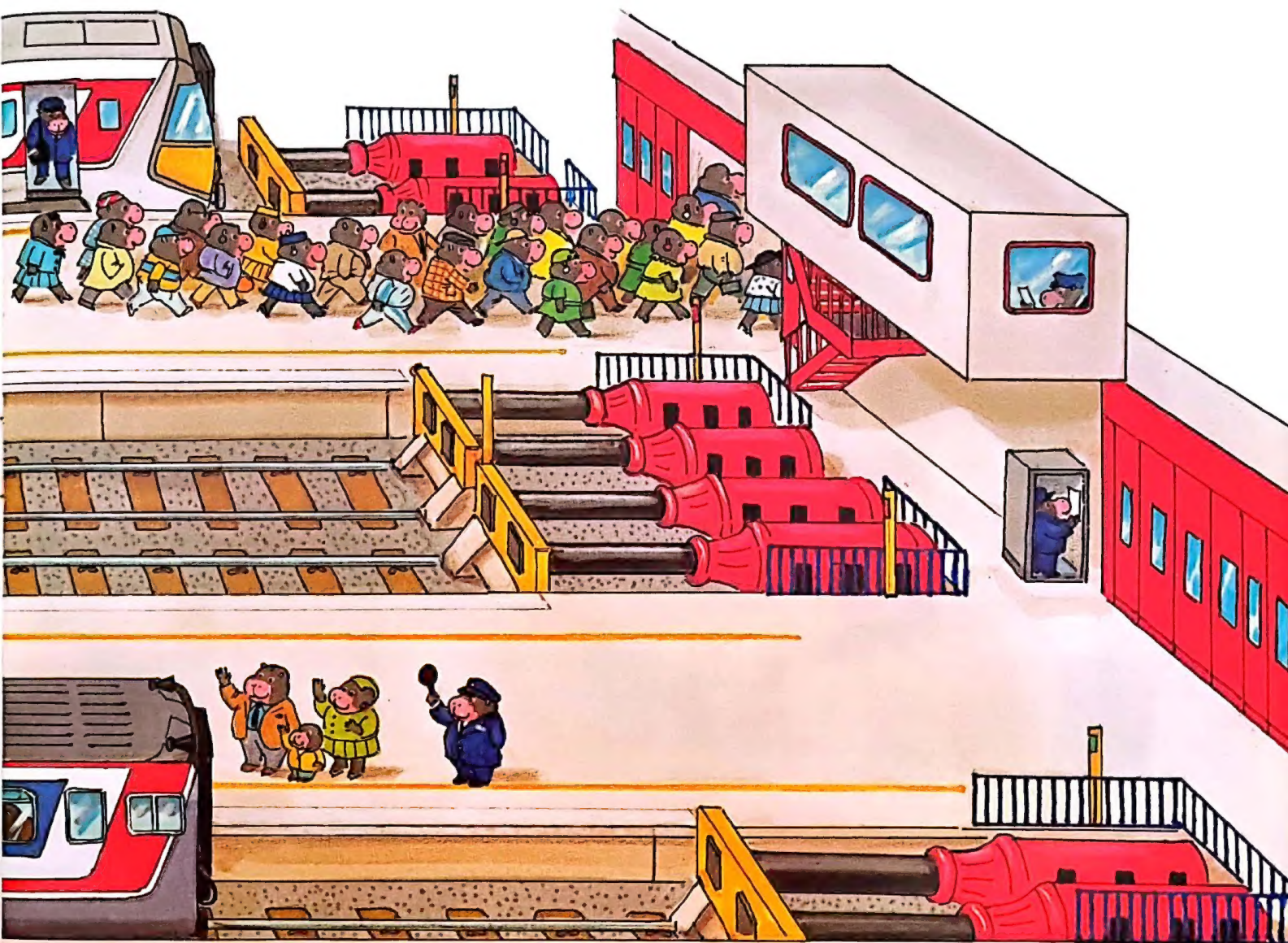
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WALKER BOOKS

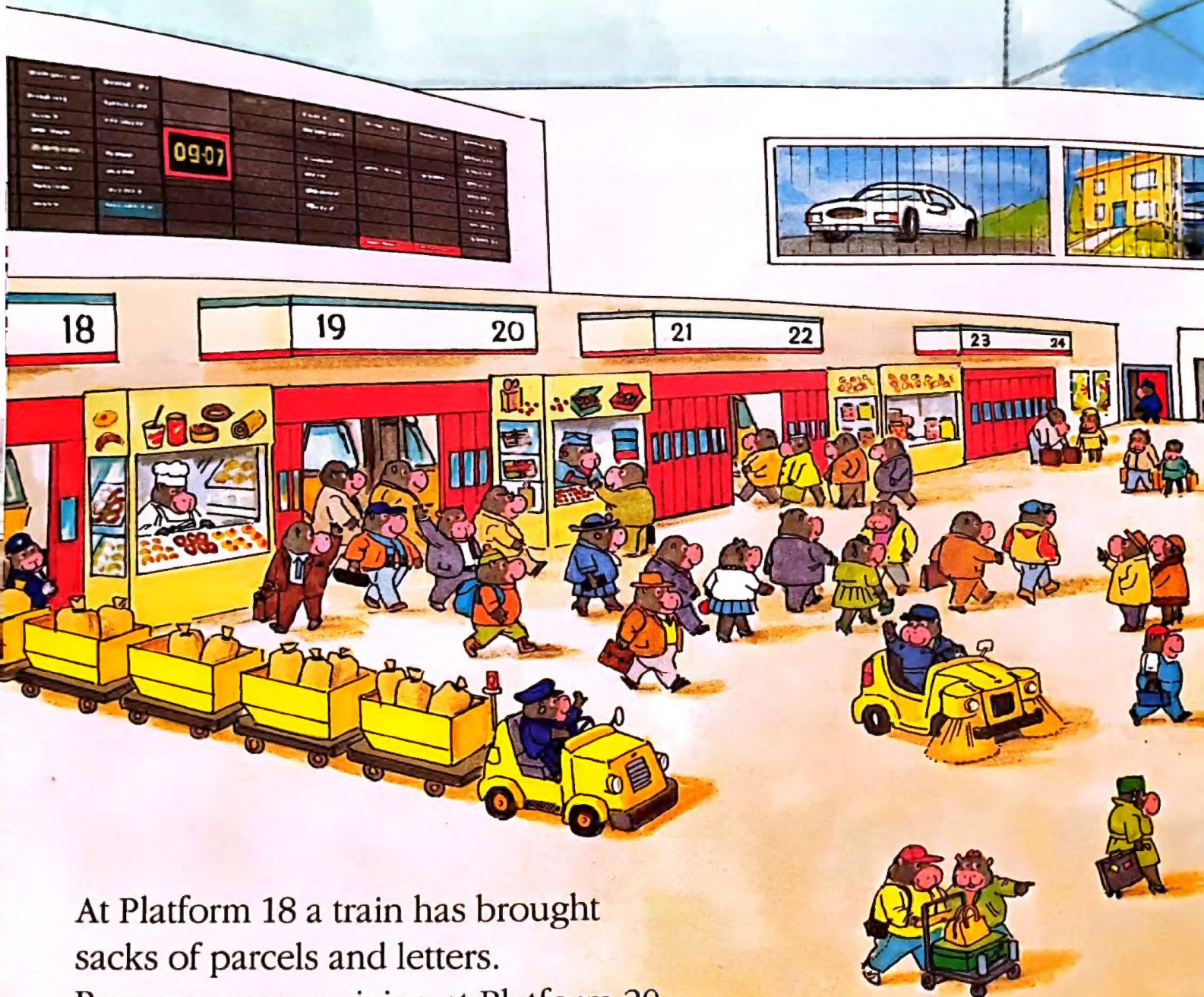
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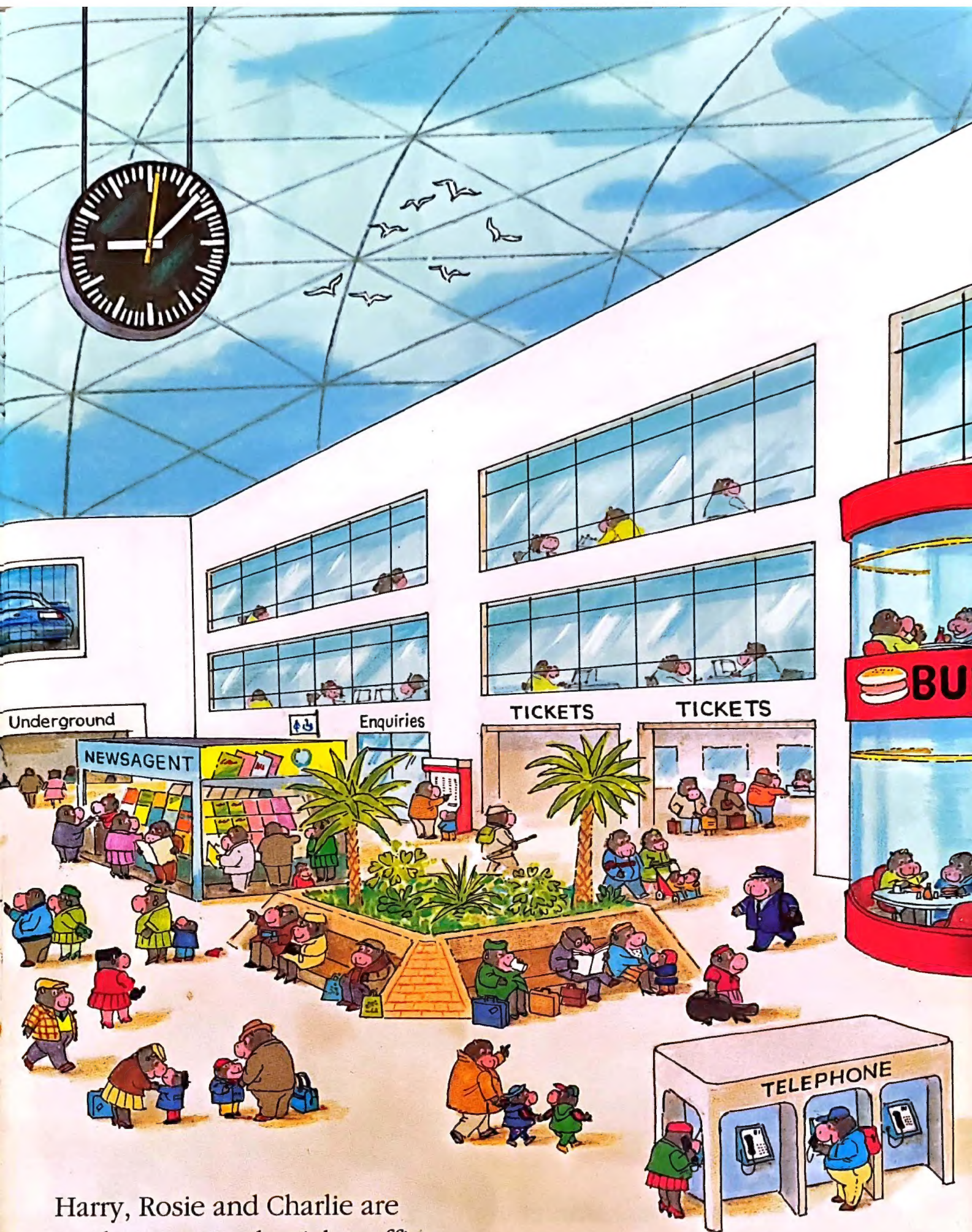
LONDON • BOSTON • SYDNEY



Harry, Rosie and Charlie Hippo are going on a train journey to see a steam train museum. You can see them near the telephones.

At a busy railway station hundreds of trains arrive and leave each day. The indicator board shows where the trains are going, the time they'll leave and the stations they'll stop at.





Harry, Rosie and Charlie are on their way to the ticket office.

On a railway there are lots of different jobs to be done:



Station Manager



Ticket Office Staff



Platform Staff



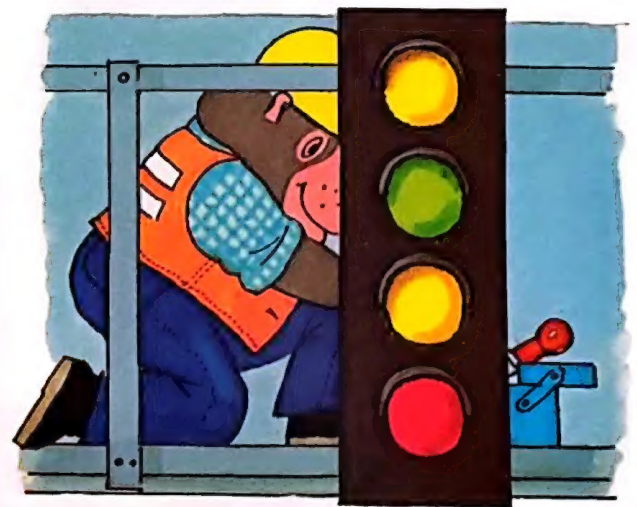
Buffet Car Staff



Restaurant Car Chef



Traffic Controller



Signal Maintenance Worker



Ticket Inspector



Train Driver



Stewardess



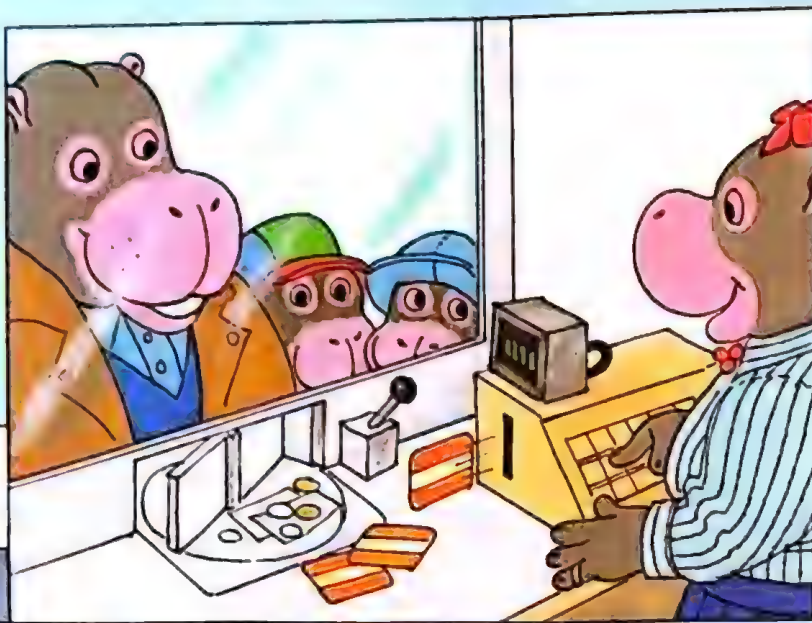
Cleaner



Track Maintenance Worker



Freight Container Loader



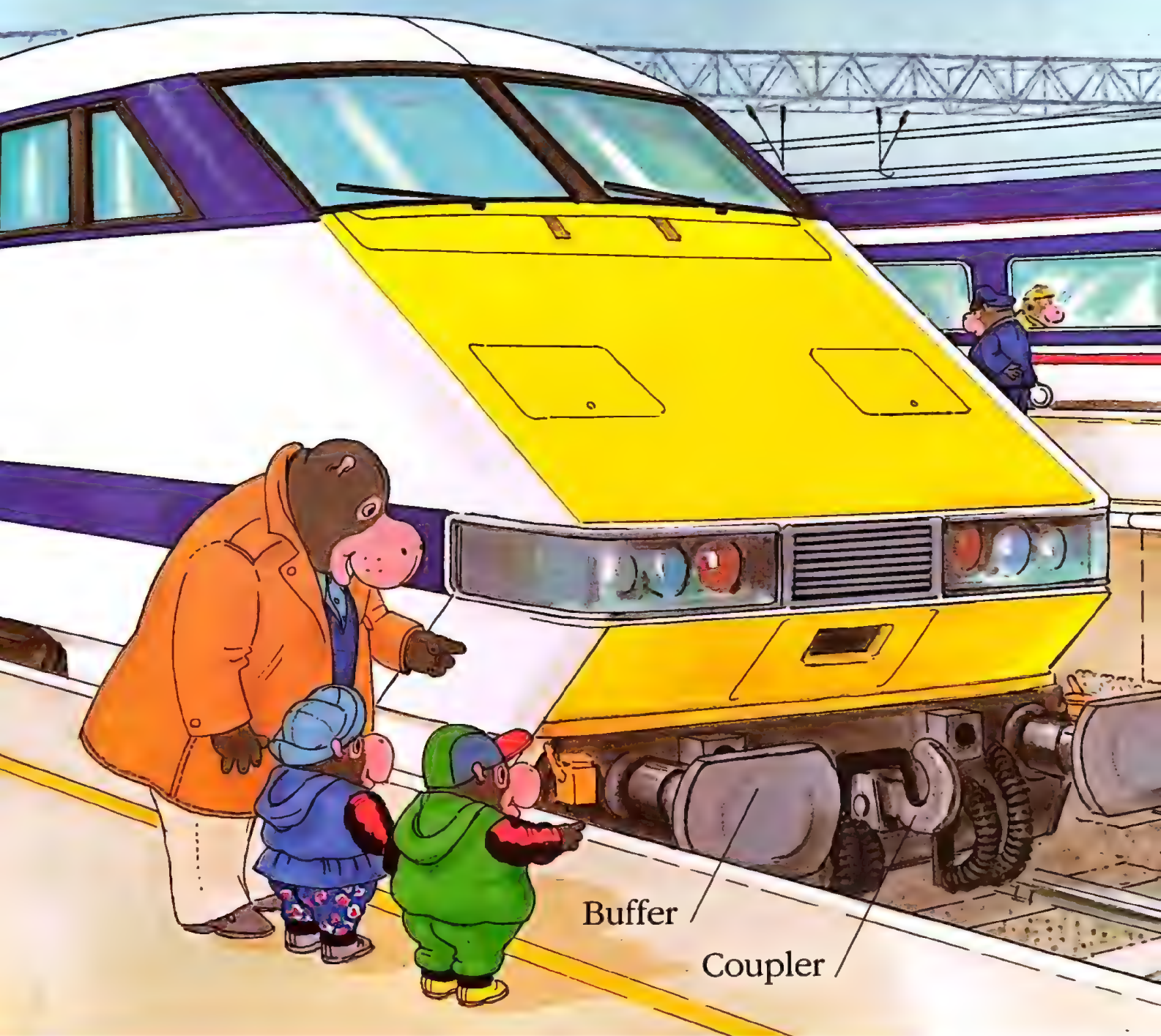
The train tickets are printed by computer. They pop out of the machine and a small screen displays the price.



Passengers are getting on board. The driver has arrived so the train will be leaving soon. Harry tells Charlie and Rosie to stand behind the yellow line.

He shows them the “buffers”. These soften the blow if the train hits anything. “Couplers” join carriages and trains together.

Harry, Rosie and Charlie will be travelling on a high-speed electric train. It has an engine at one end but the train can be driven from either end. On the return journey the engine doesn't need to be changed around.




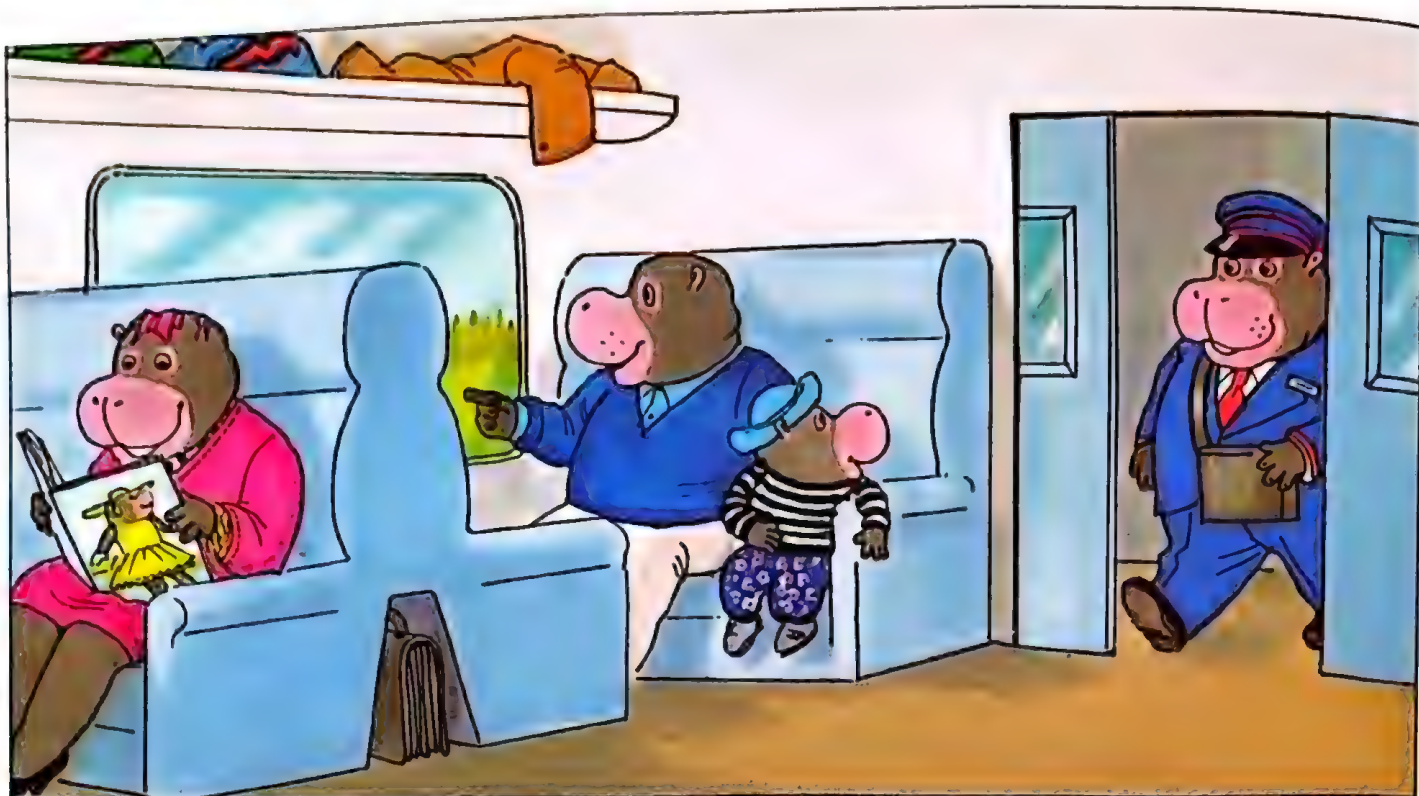


Inside the driver's cabin you can see:

- 1 Driver's master key turns the engine on and off.
- 2 Power control handle. 3 Brake control handle.
- 4 Control and indicator switch panel.
- 5 Automatic warning system.
- 6 Speedometer shows how fast the train is going.
- 7 List of places en route and the time each should be passed.



- 8 Phone and radio for contacting the Traffic Controller.
- 9 Telephone for contacting the Train Conductor.
- 10 Chair for Deputy Driver (only on board high-speed trains).
- 11 Lever controlling the horn.
- 12 Control switch for moving the train forward or backward.
-  The platform warning signs mean "Do not cross this line" and "Do not touch the live rail: it is very dangerous".



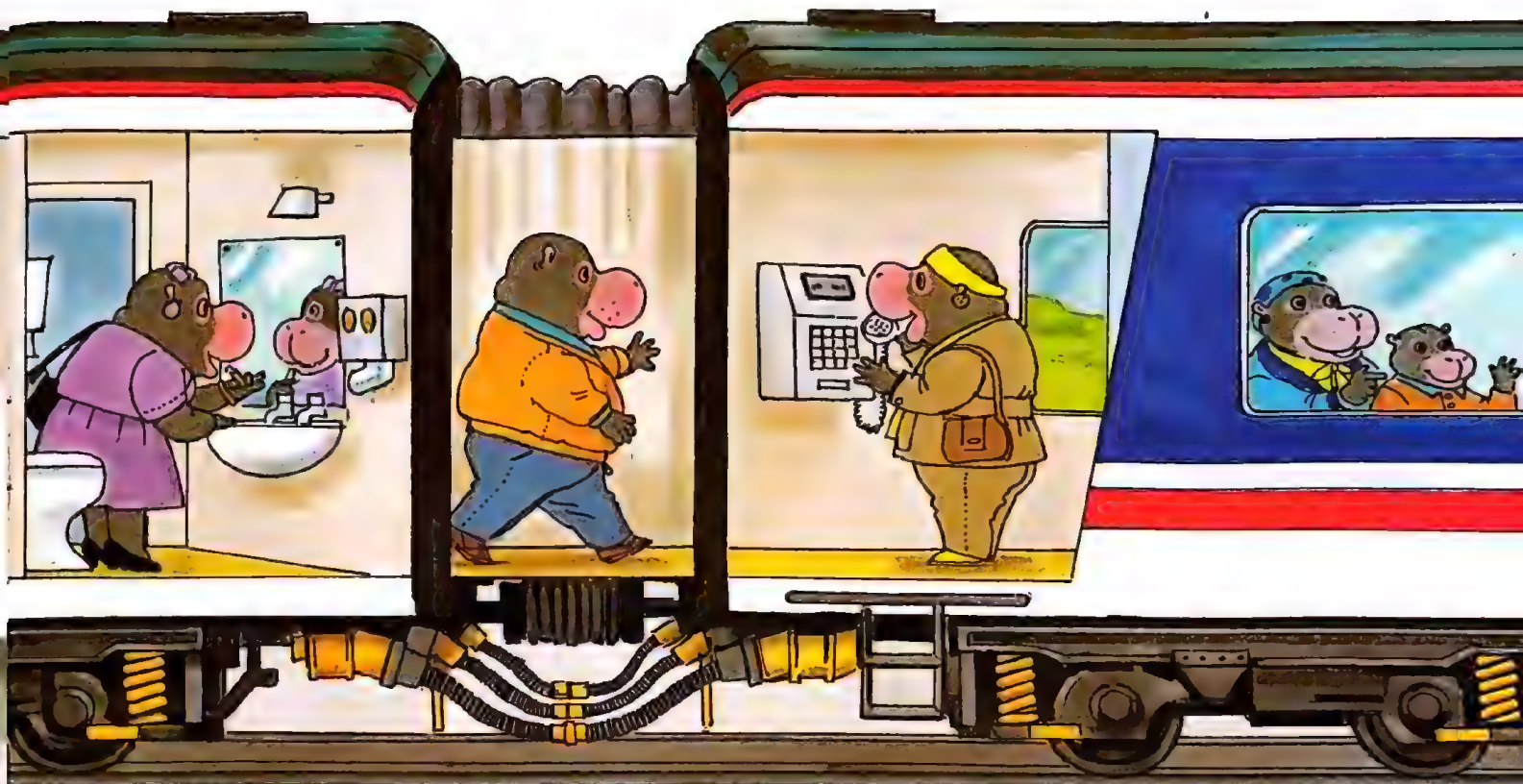
Harry, Rosie and Charlie are in their seats. As the train sets off Rosie sees the ticket inspector coming through the automatic doors.



At each end of the corridor there are automatic doors – useful if you are carrying luggage. There's a toilet with wash basin and



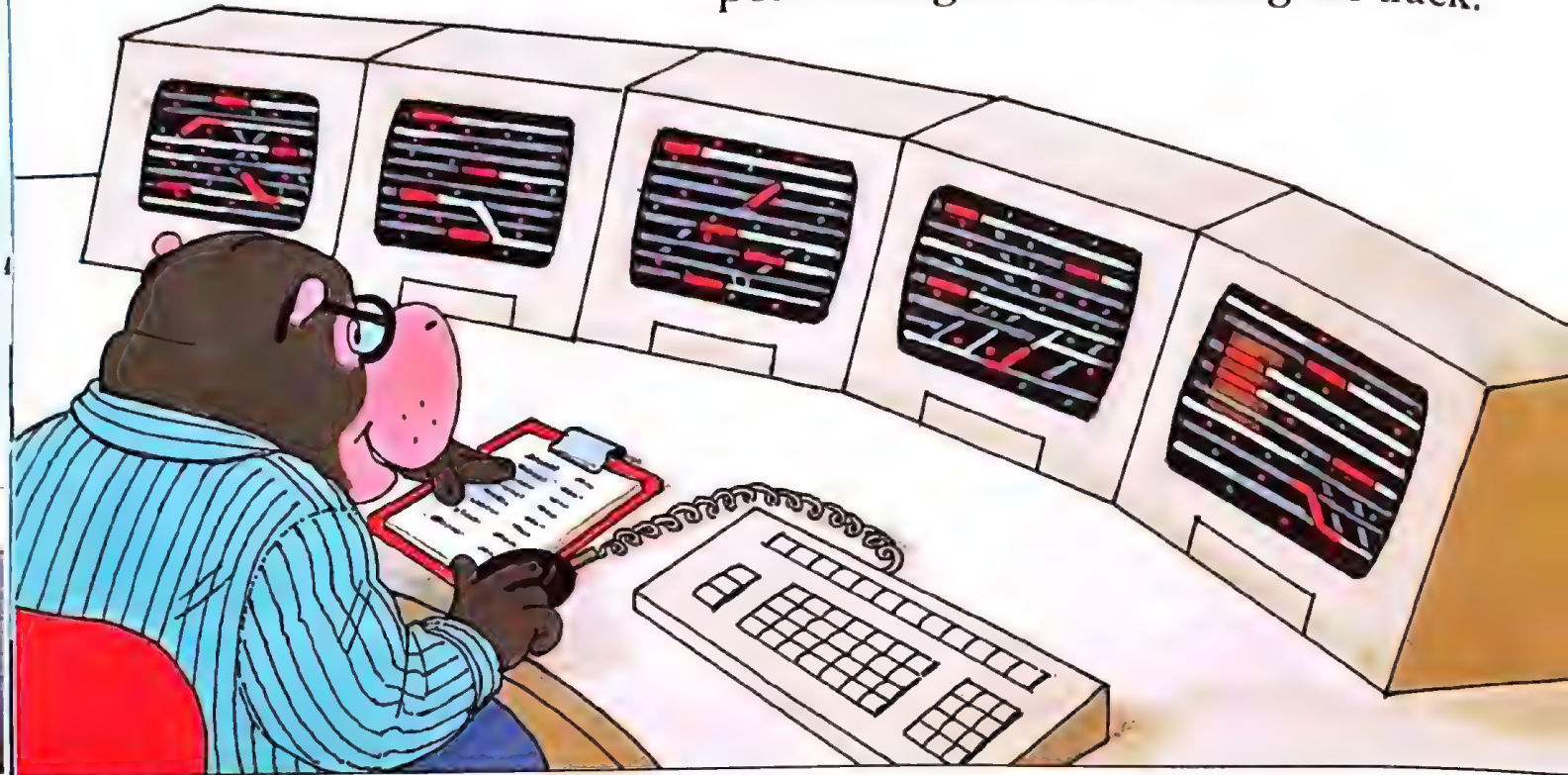
Charlie and Rosie are on a corridor train. They can walk from carriage to carriage, or to the buffet car when they want a drink.



there's a telephone. Some trains have a restaurant car. Many overnight trains have bunk beds in sleeping compartments.



While passengers are enjoying the train ride a traffic controller makes the signal and point changes needed along the track.



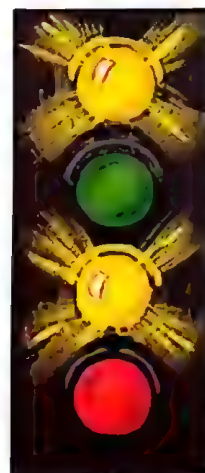
Signal and point changes can be made up to 60 miles from the control centre. The controller's instructions appear on the screens. A train driver on the track can tell from the signal lights if the line ahead is clear or not.



STOP.



Go carefully.
Be ready to
stop at the
next signal.



Go carefully.
Be ready to
stop at the signal
after next.



All clear:
GO.

What does this screen tell us?

1 Y 2 4 is a train.

1 tells us it's an express passenger train.

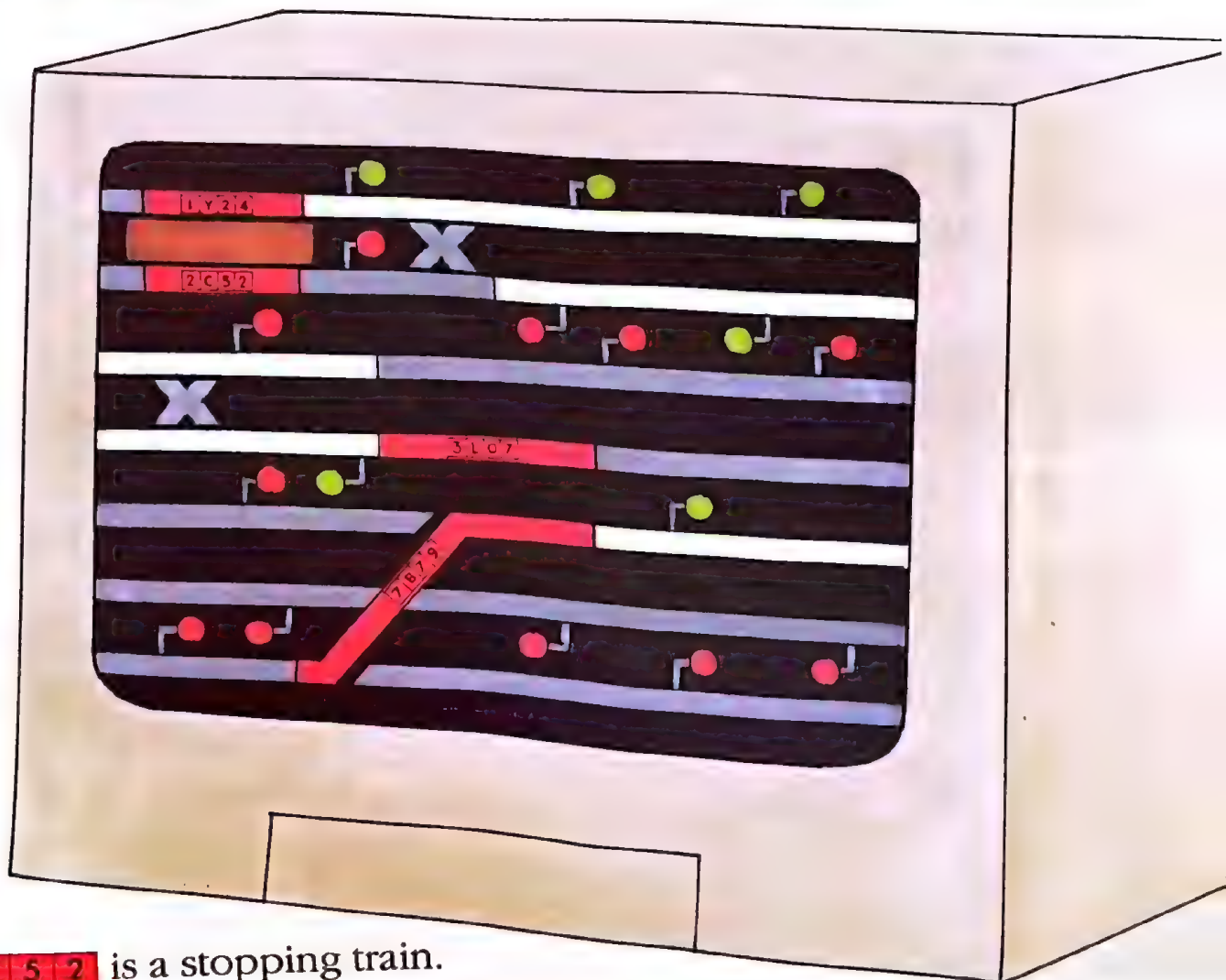
Y tells us it's going to a place or an area of the country beginning with Y.

2 4 is a number given to the train by the controller.

The train is at a station which is coloured brown.

The routes set for the trains are shown in white.

Train **1 Y 2 4** will leave the station soon because there are green "go signals" on the line ahead.



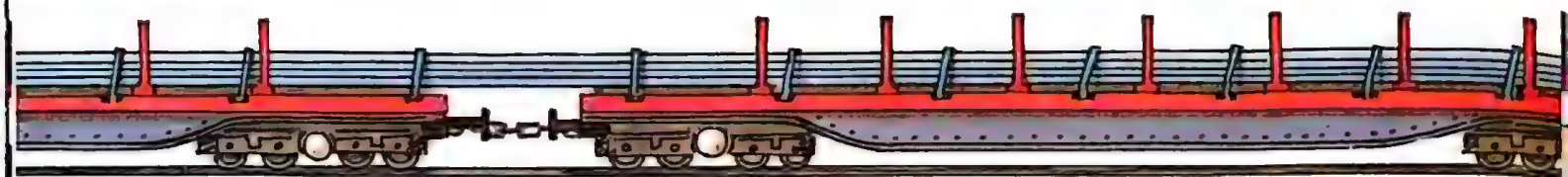
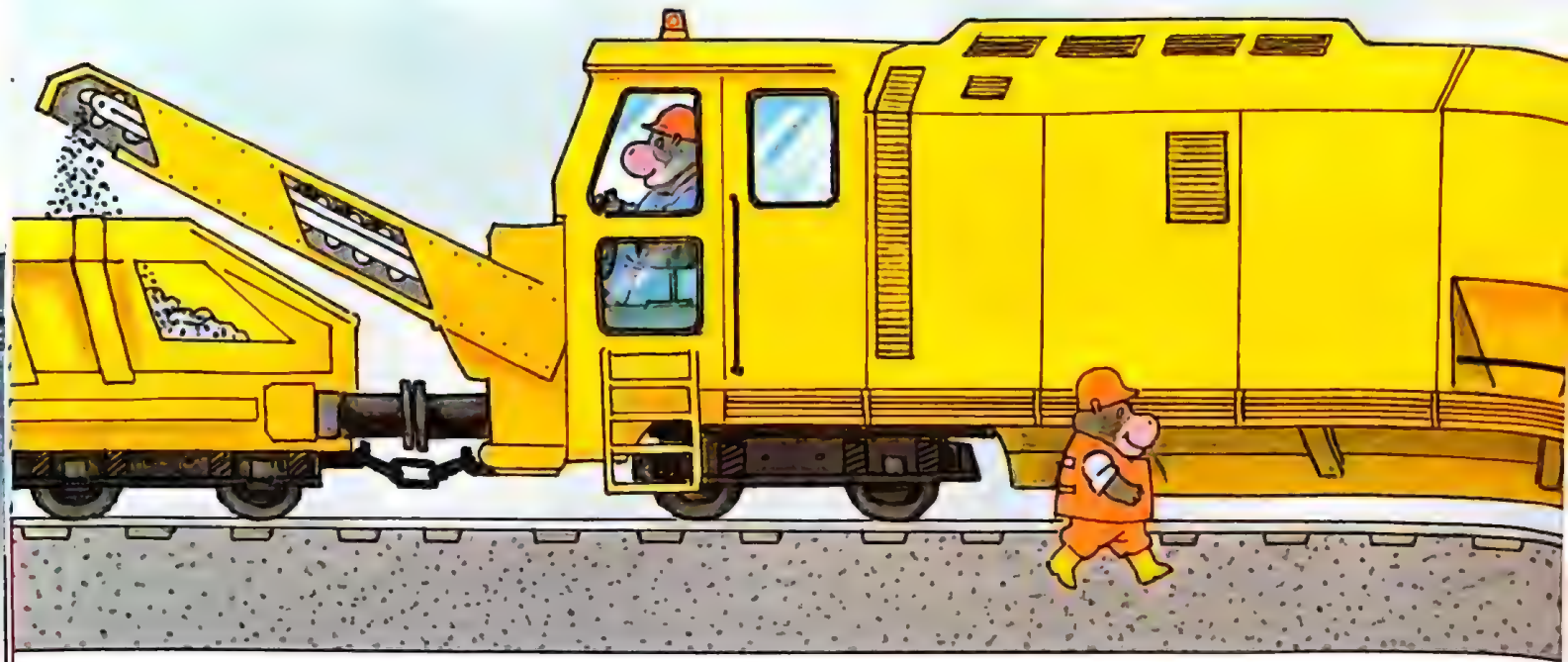
2 C 5 2 is a stopping train.

3 1 0 7 is a parcel post train.

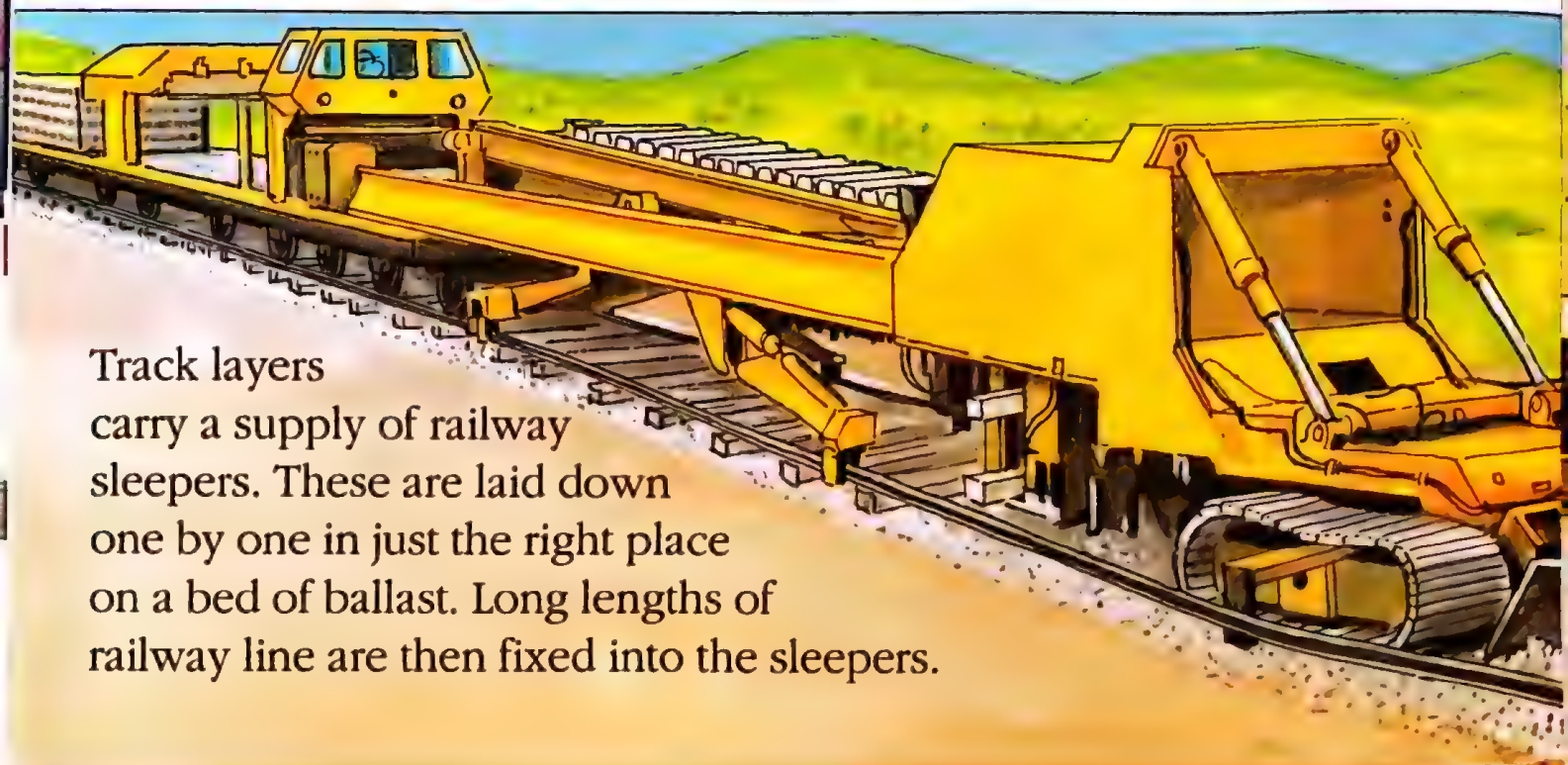
7 B 7 9 is a freight train moving across a set of points. Points are movable rails by which a train is directed from one line to another.

Maintenance crews keep the track safe. Railway lines are fixed to wooden or concrete “sleepers”. These rest on a bed of “ballast” made of small stones.

Over time the edges of the stones get rubbed away. The ballast loses its spring and the track sinks.



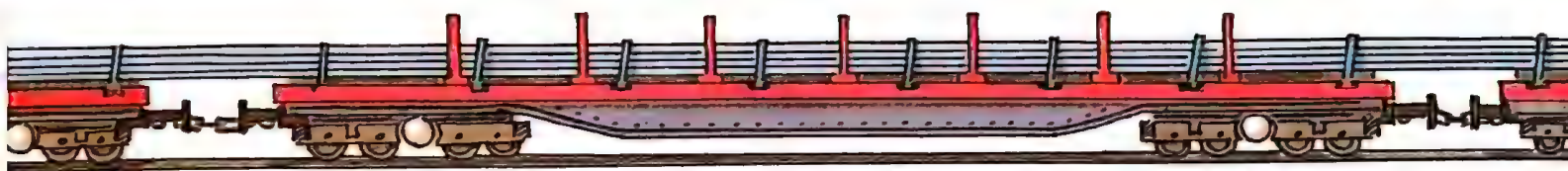
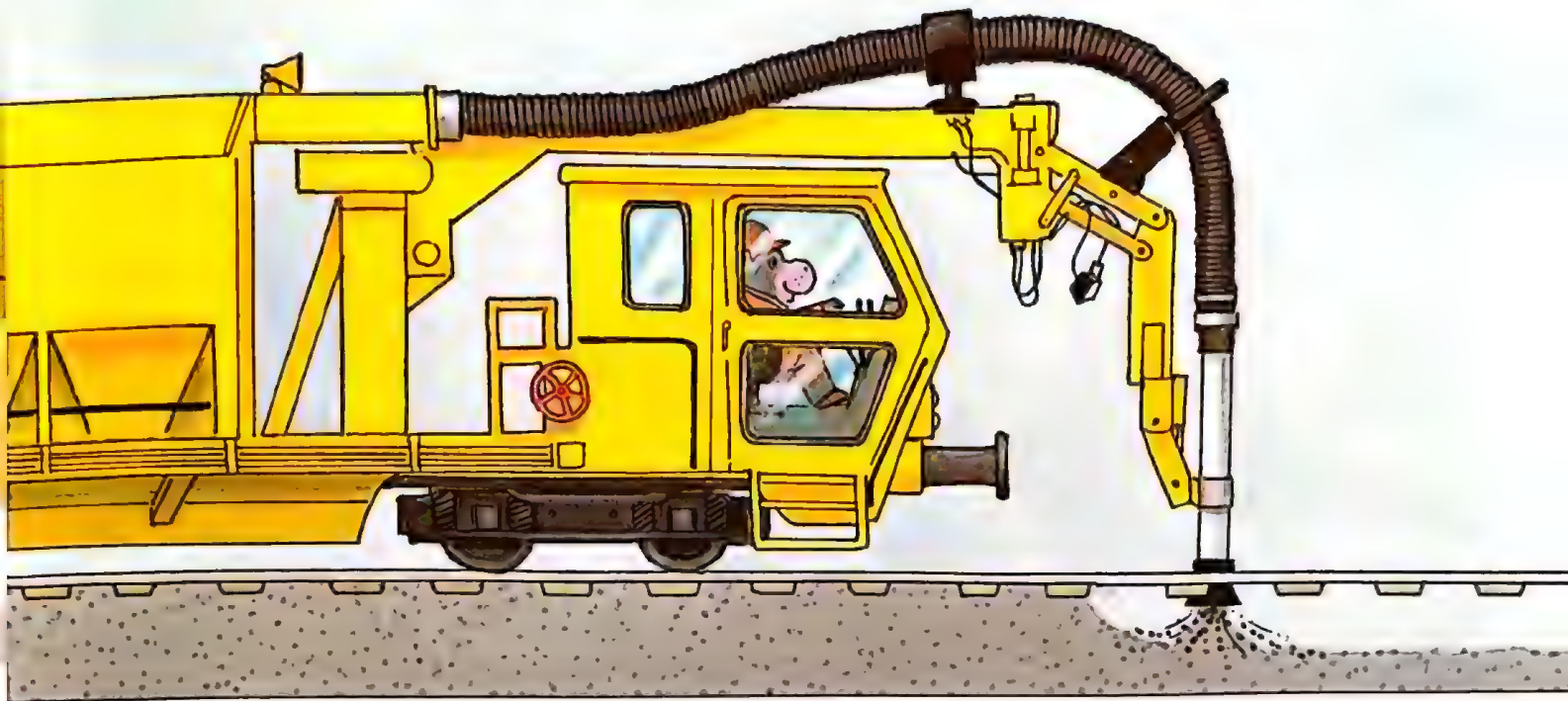
Railway line is now made in very long pieces, up to 400 metres long.



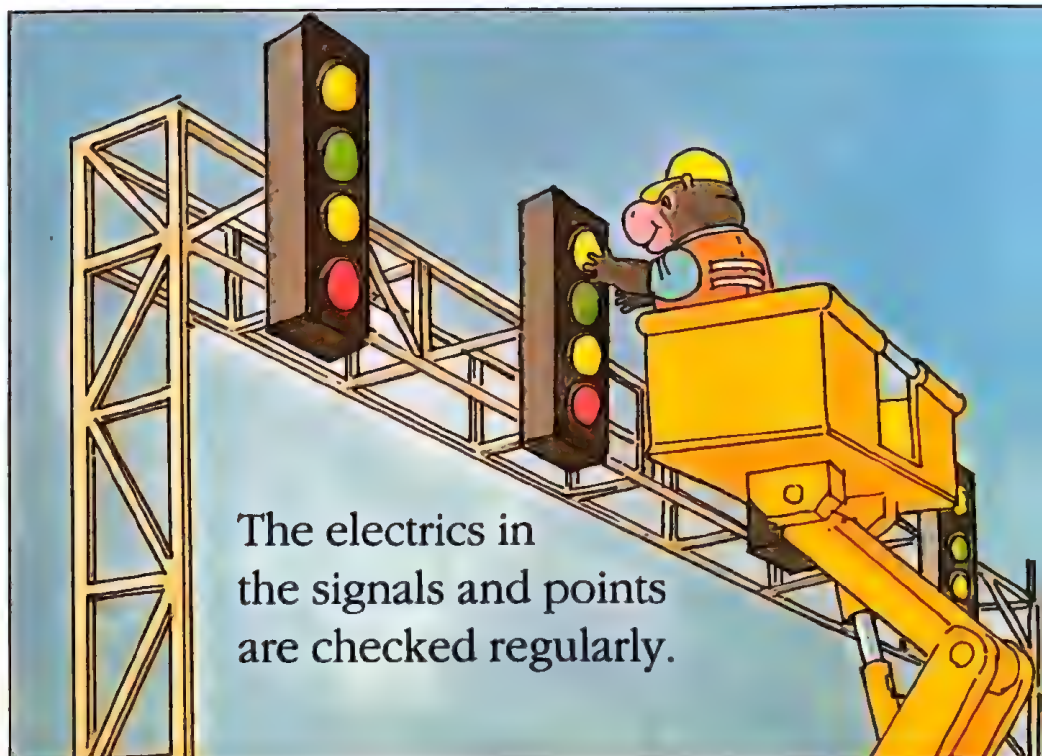
Track layers carry a supply of railway sleepers. These are laid down one by one in just the right place on a bed of ballast. Long lengths of railway line are then fixed into the sleepers.

This machine sucks up the worn ballast without moving the railway line. Later, new ballast is pressed

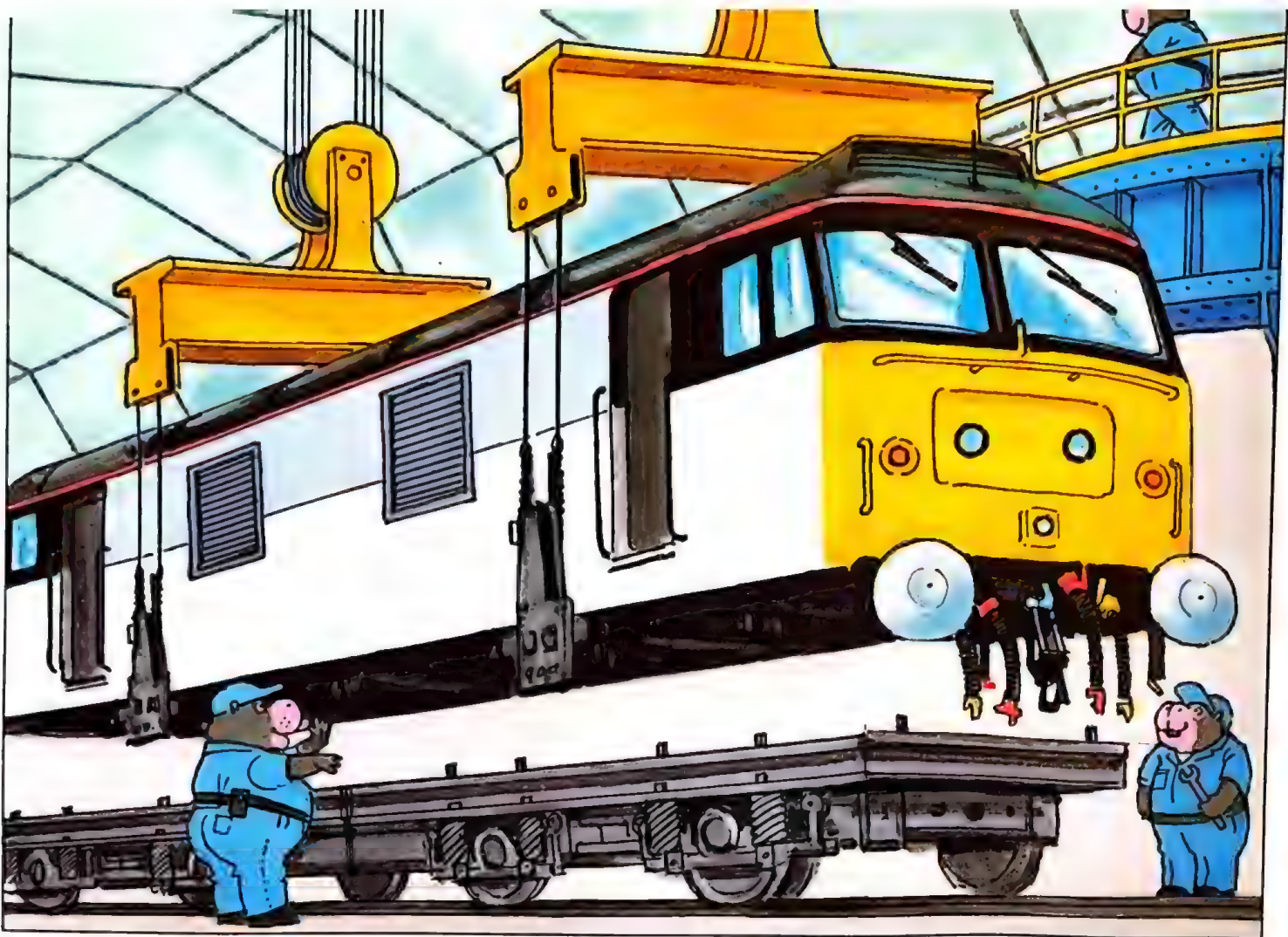
back to make a firm, springy base for the track and bring it to the correct height.



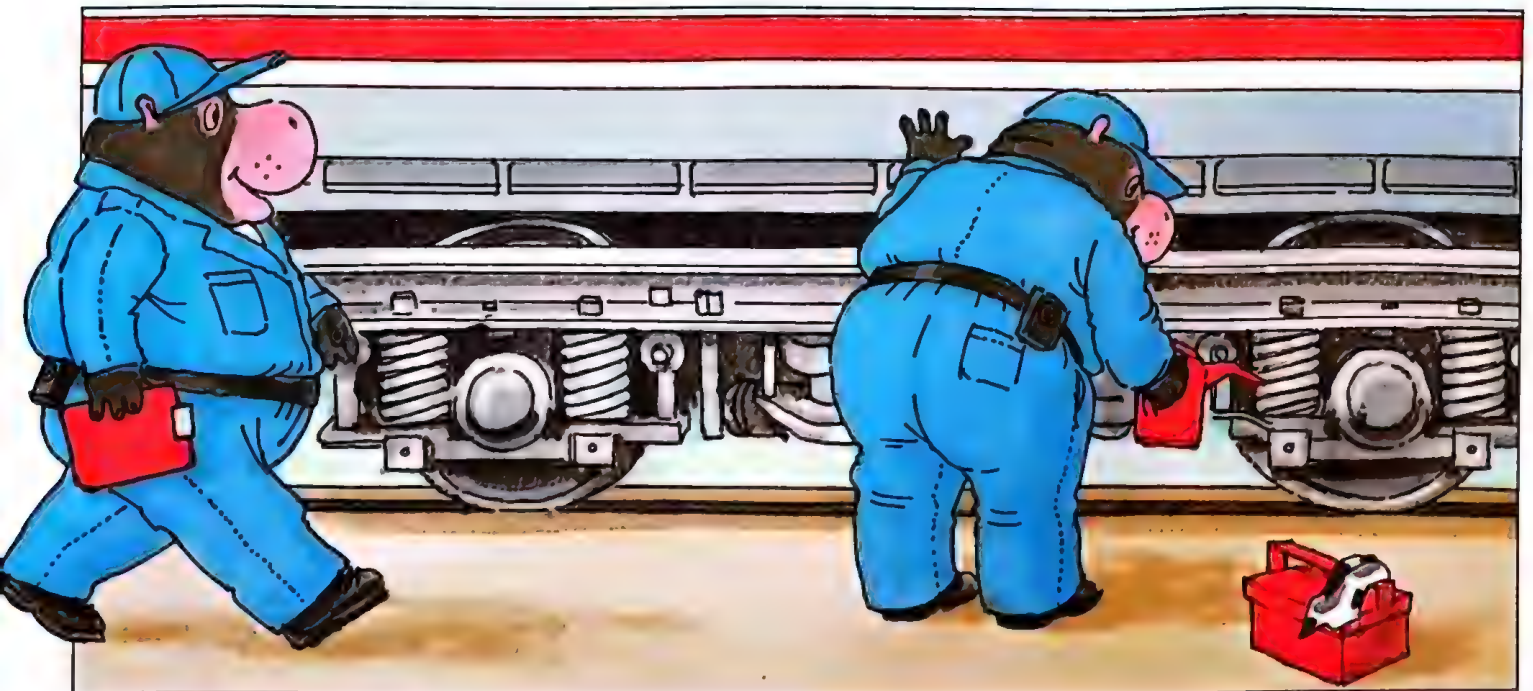
These, welded together, give a smoother train ride than short lines.



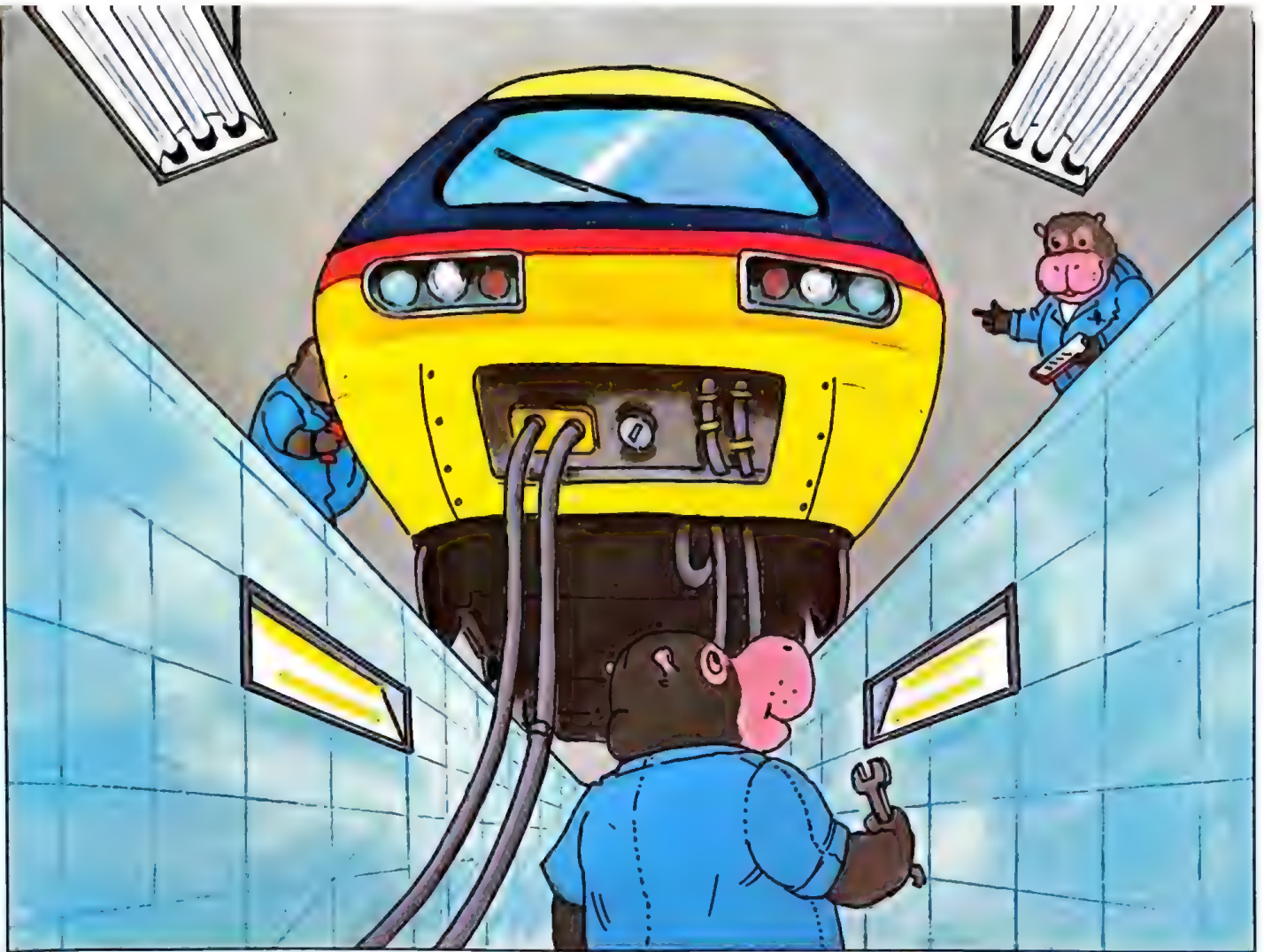
The electrics in the signals and points are checked regularly.



All the trains, carriages and freight wagons have to be kept in good working order. Here a gantry crane lowers an engine weighing over 120 tonnes onto its "bogie".



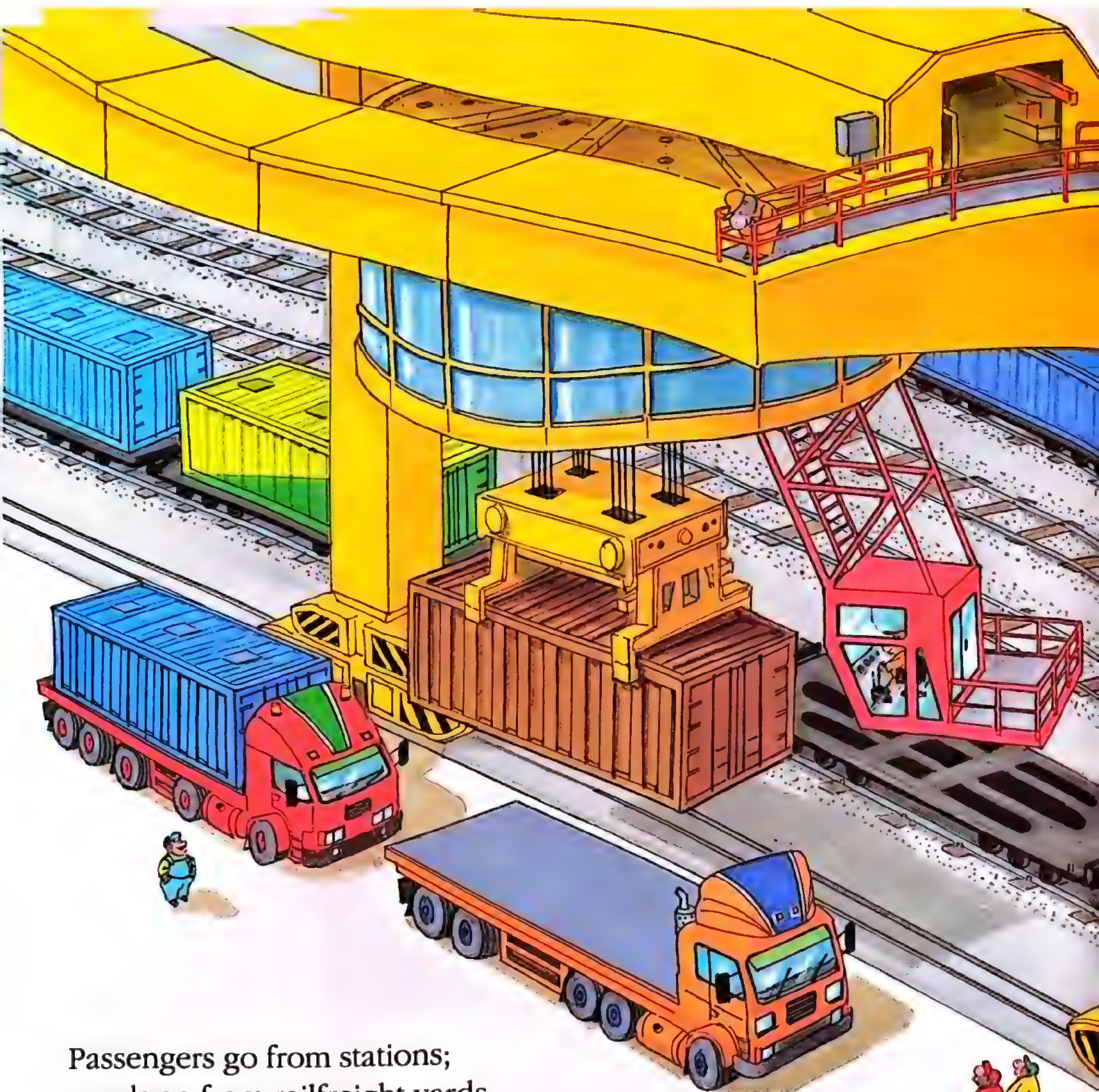
Because so much weight is carried by the train's bogie, the workshop check the wheels and springs carefully for any problems.



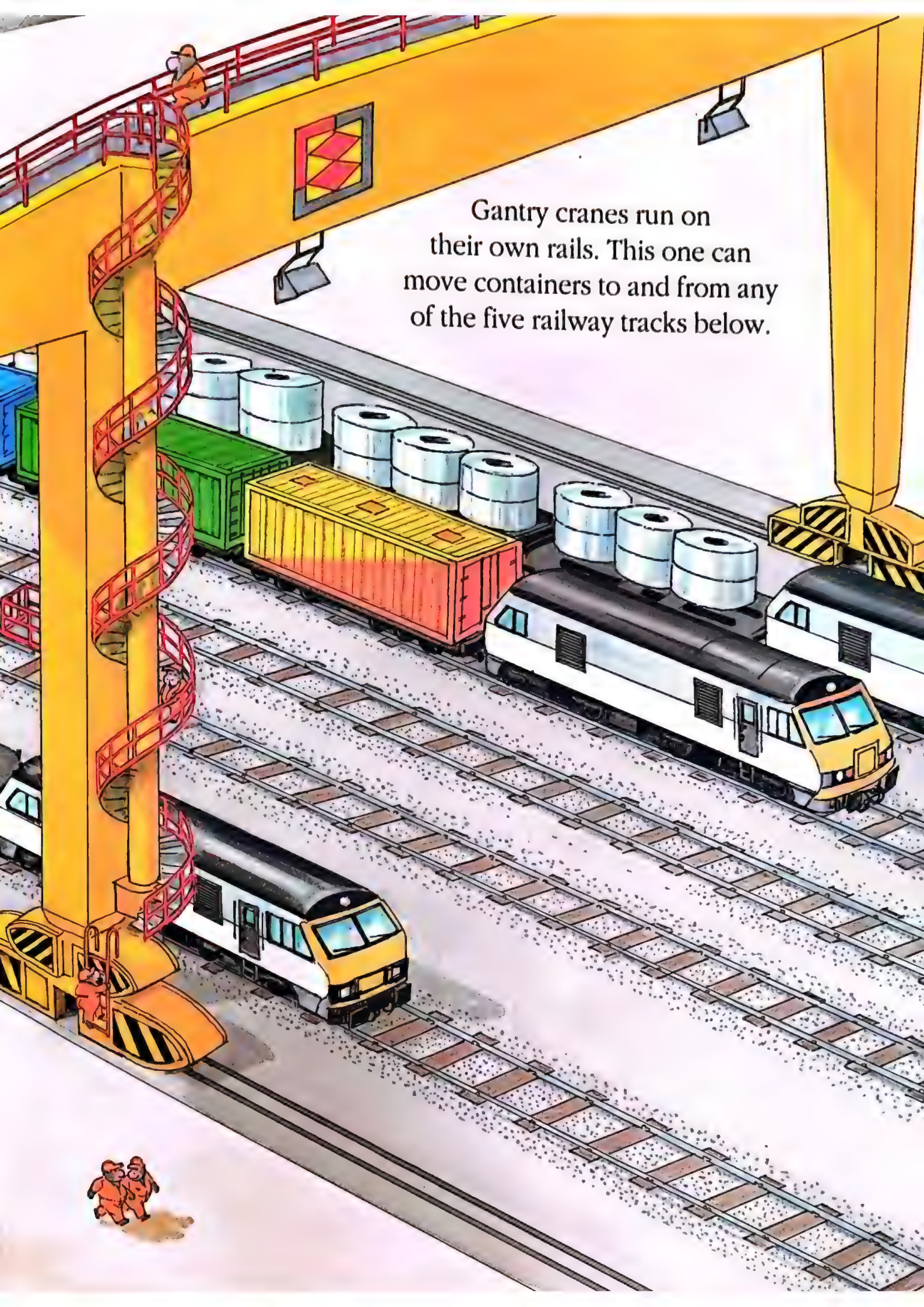
In the workshop the trains and carriages are placed over special pits. The wall lights help the maintenance crews see more clearly.



Here the front of a high-speed electric train needs some welding repair work. Once cleaned and repainted it will be ready for service.



Passengers go from stations;
goods go from railfreight yards.
Food, clothes, machines and many
other things travel in big steel containers.
These containers often travel thousands
of miles on container ships or cargo planes.
Then trucks bring them by road to the freight yard to continue
their journey by train. A crane lifts the containers onto the wagons.
Can you see the crane driver in the “floating cabin”?

A detailed illustration of a railway yard. A large yellow gantry crane with a red spiral staircase is positioned on the left. It has a worker on a platform at the top. Below the crane, several railway tracks are visible. One track has a train with a yellow and black locomotive and a yellow container. Another track has a train with a yellow and black locomotive and a green container. A third track has a train with a yellow and black locomotive and several white cylindrical tanks. A fourth track has a train with a yellow and black locomotive and a yellow container. A fifth track has a train with a yellow and black locomotive and a yellow container. The background is a yellow wall with a red and yellow diamond-shaped window. Two workers in orange uniforms are walking in the bottom left corner.

Gantry cranes run on their own rails. This one can move containers to and from any of the five railway tracks below.



The train arrives at the station. Harry, Charlie and Rosie get off ...

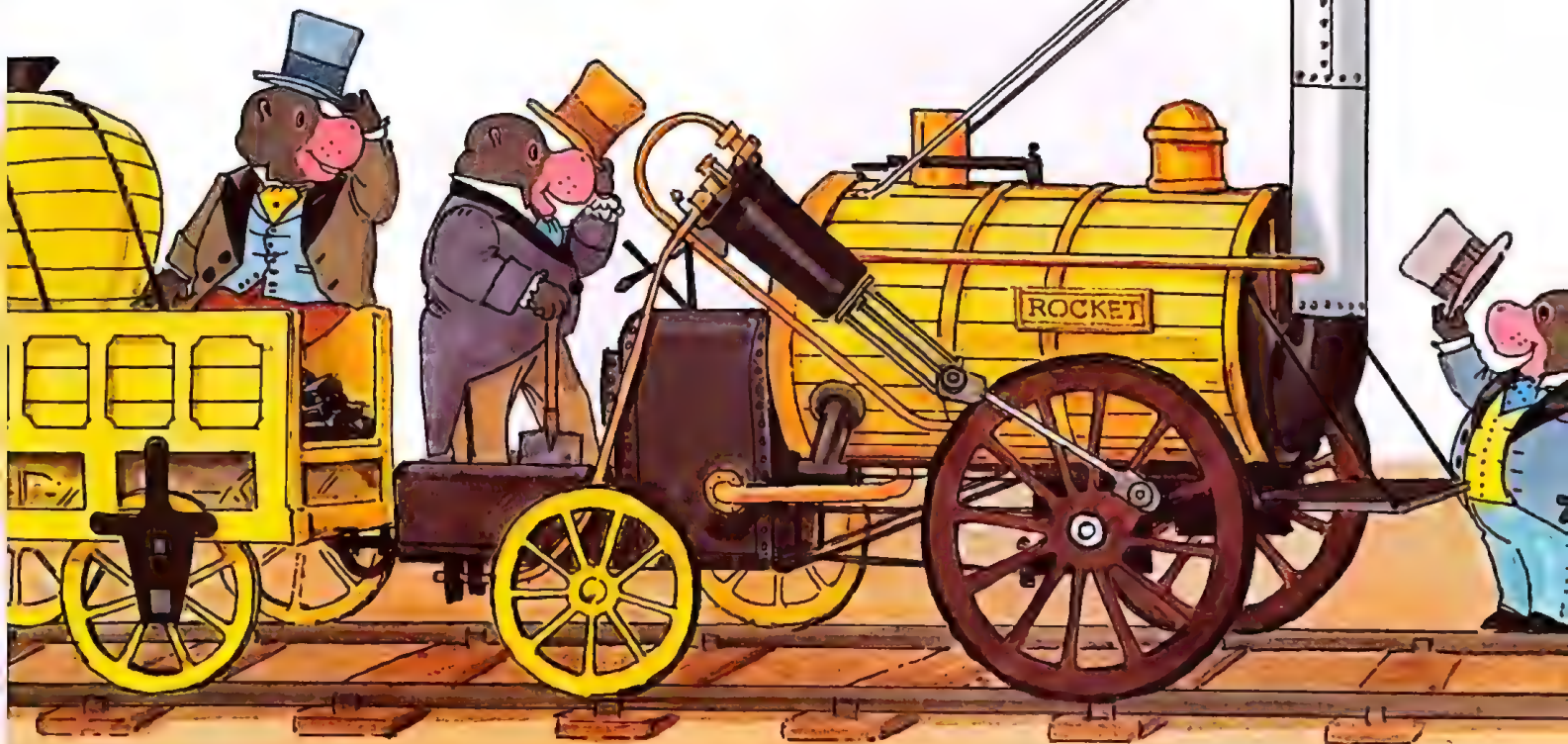


The Rocket's carriages were small, so luggage went on the roof.



and walk to the steam train museum.

They see Stephenson's Rocket, one of the oldest steam trains in the world. In 1830 it ran regularly between Liverpool and Manchester. The journey was 35 miles and took 1 hour and 35 minutes.



Behind the engine was a barrel of water and plenty of coal. A coal fire in the firebox heated water in the boiler

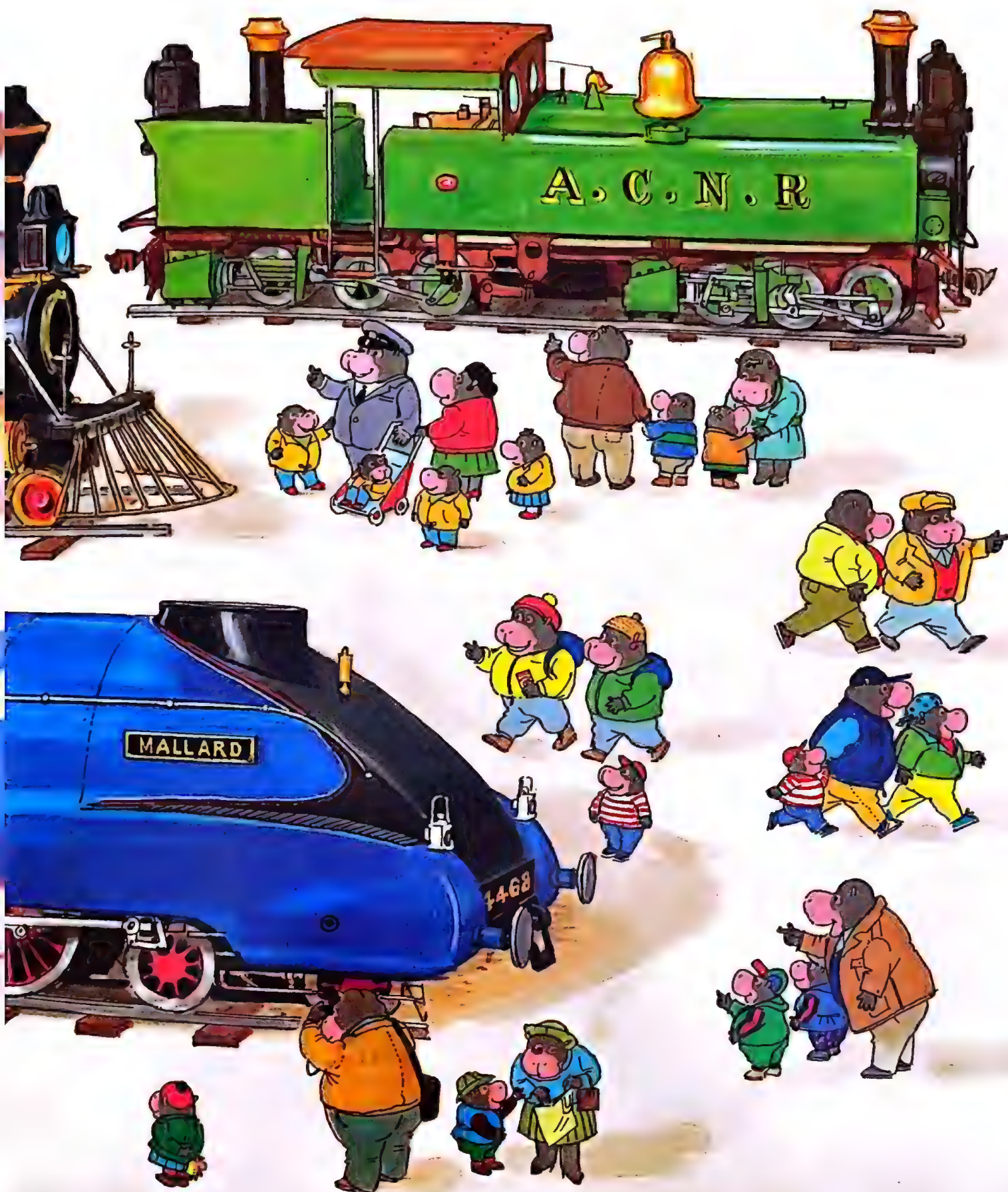
to make steam. The steam was used to turn the front wheels, move the train and pull the carriages.

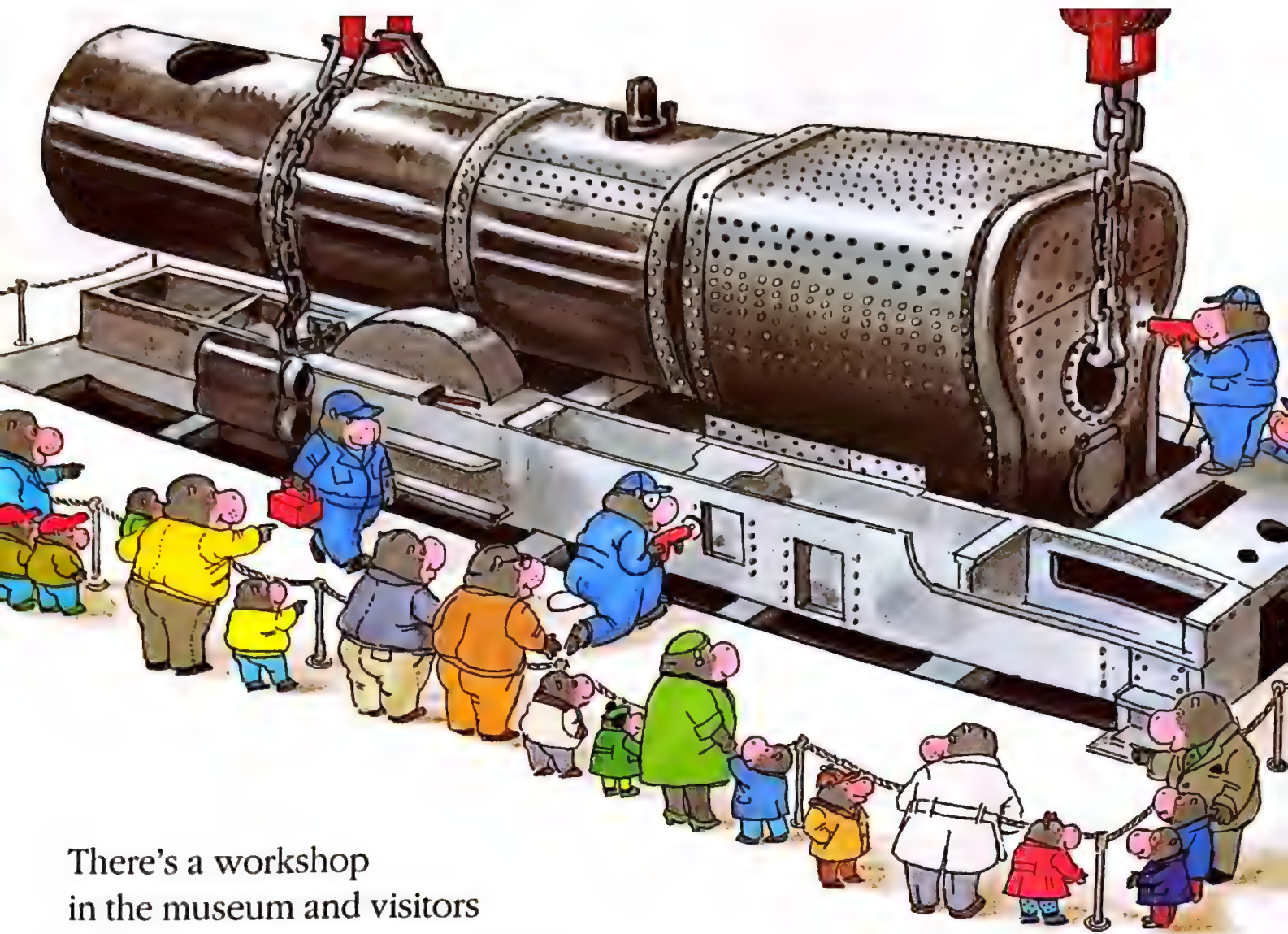
The museum has steam trains from around the world.
This American train of the mid 1870s has a steam whistle,
a warning bell, a headlamp and a cowcatcher to stop buffaloes
from crashing into the train. A buffalo running
into a train could derail it!



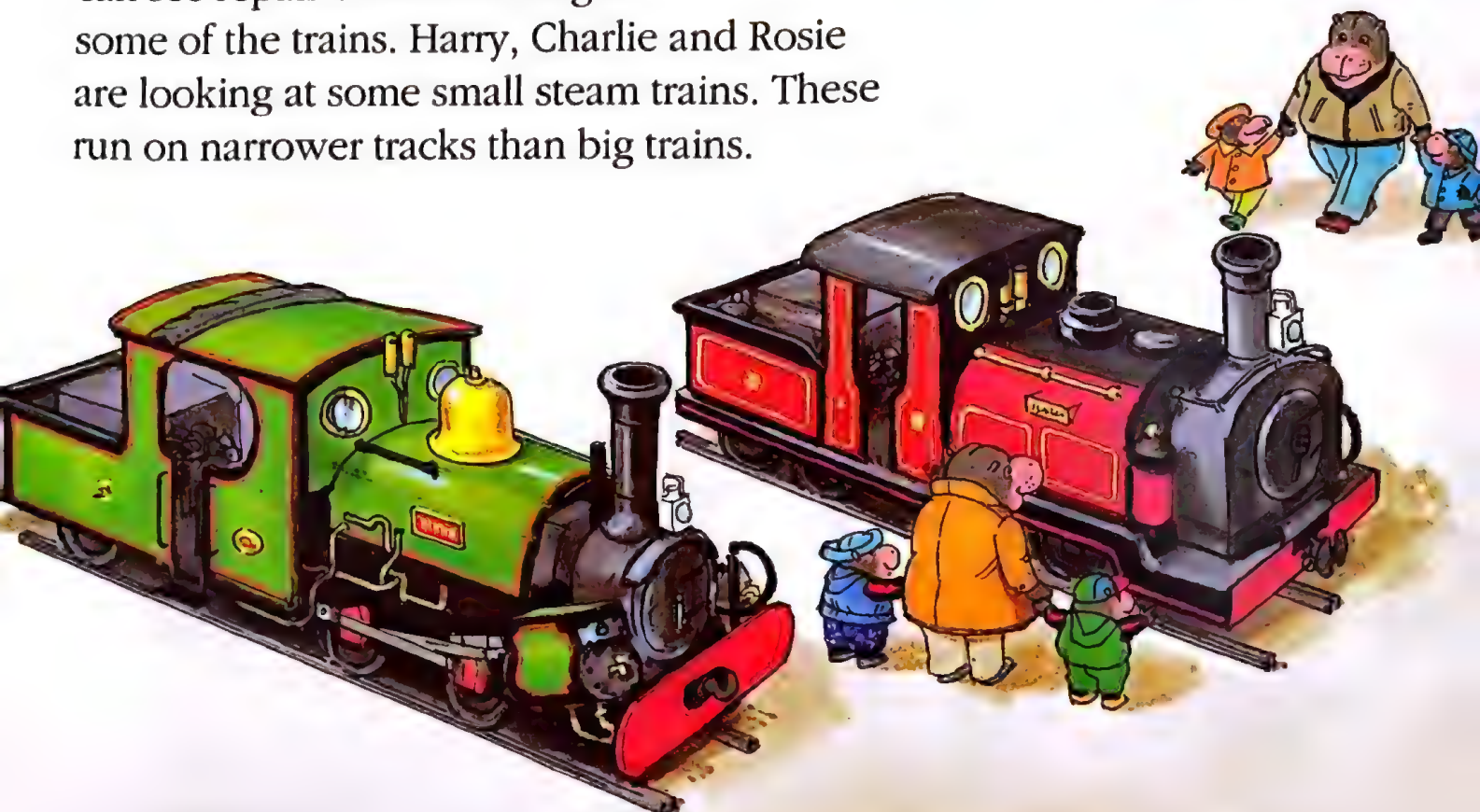
The Mallard, made in Britain, set a world speed record
for a steam train of 203 km/h (126 mph).
The record was set in 1938 and has never been broken.

This train was built in 1903 for use in Chile. It could go up and down steep railway tracks and round tight curves.





There's a workshop
in the museum and visitors
can see repair crews working on
some of the trains. Harry, Charlie and Rosie
are looking at some small steam trains. These
run on narrower tracks than big trains.





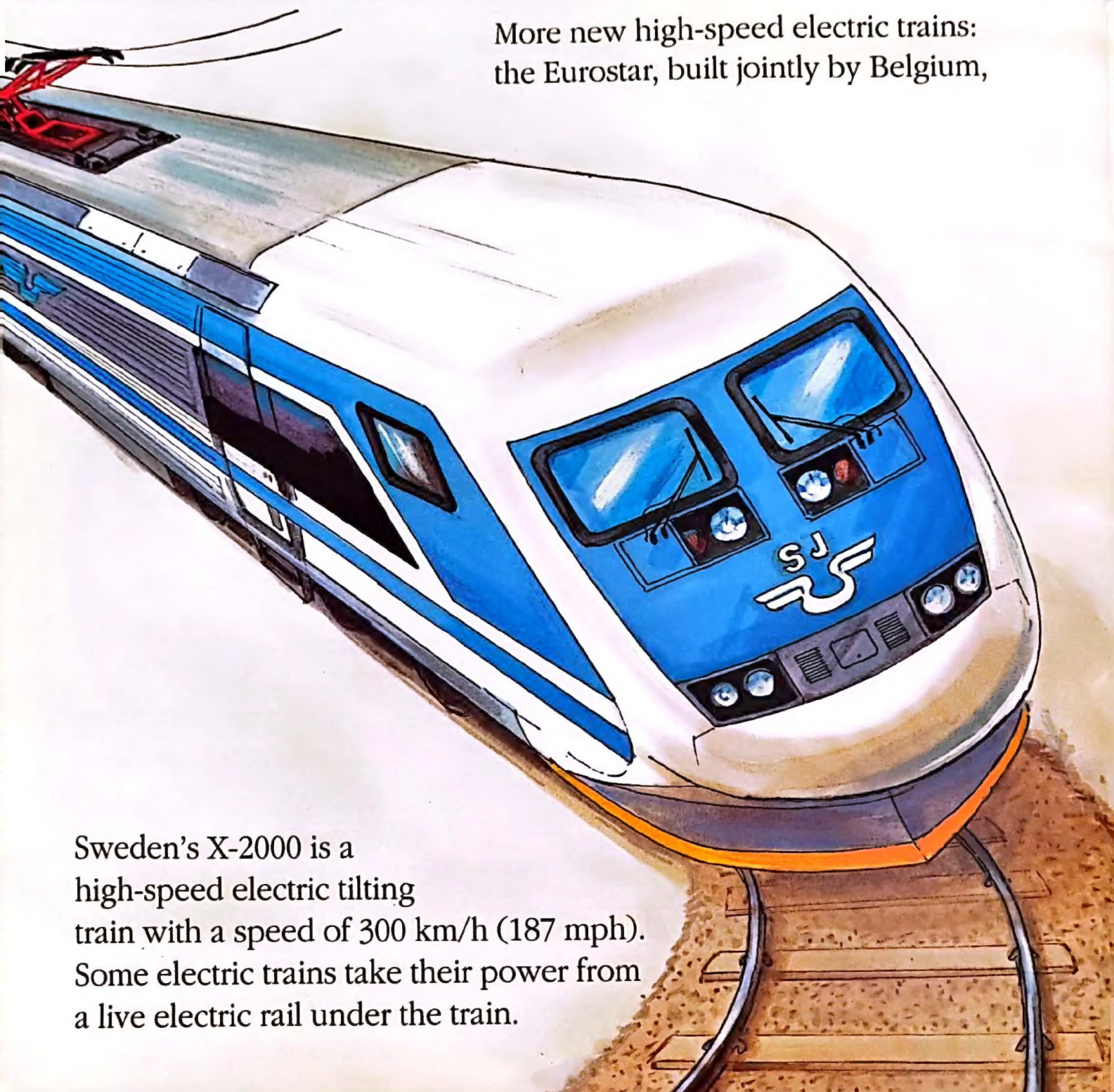
It's time to head for home. What better way to travel than on a high-speed electric train?



Before going to bed, Charlie and Rosie show Mum the train postcards and posters they brought back.



More new high-speed electric trains:
the Eurostar, built jointly by Belgium,



Sweden's X-2000 is a
high-speed electric tilting
train with a speed of 300 km/h (187 mph).
Some electric trains take their power from
a live electric rail under the train.



France and Britain is the Channel Tunnel train which links London, Paris and Brussels.

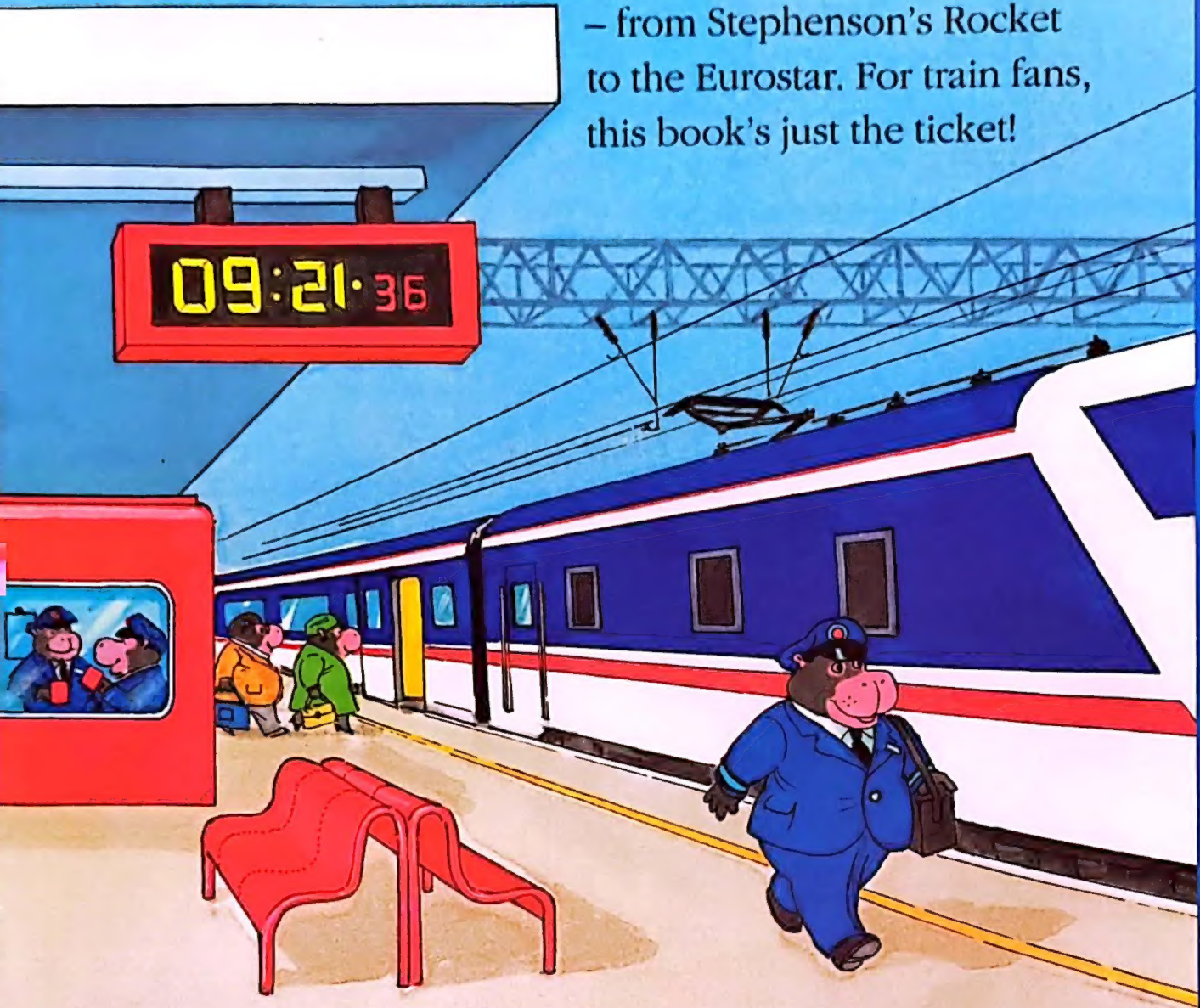


Italy's Pendolino is a high-speed electric tilting train with a speed of 290 km/h (180 mph). Tilting trains run at higher speeds on curved track than other trains.





Harry, Rosie and Charlie Hippo are travelling on a high-speed electric train to visit a steam train museum. Join them on their journey and find out all about controls, signals, train and track maintenance, as well as some fascinating facts about engines old and new, – from Stephenson's Rocket to the Eurostar. For train fans, this book's just the ticket!



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